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| 10/527,187 | 03/10/2005 | Hui Li | 1454.1601 | 1120 |

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| EXAMINER | |
|---|---|
| PHUONG, DAI | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/527,187 | LI ET AL. | |
| | Examiner | Art Unit | |
| | DAI A. PHUONG | 2617 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *14-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 14-16, 19-20 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel Camara et al., "A GPS/Ant-like Routing Algorithm for Ad Hoc Network", IEEE, XPO 10532722 (from IDS filed on 05/29/2008) in view of Mansour (U.S. 6292671).

Regarding claim 14, Daniel Camara et al. disclose a method for routing a connection from a first mobile station to a second mobile station by way of at least one further mobile station in a wireless communication system (pg 1234, D. Alogrithm. Daniel Camara et al. disclose the mobile host sends a request packet to n asking for its routing table which is sent back to the host), comprising:

acquiring positional information on the first mobile station, the second mobile station and the further mobile station (pg 1233, A. Location Information. Daniel Camara et al. disclose that all mobile hosts participating in a MANET have a GPS unit which provides to the host its position).

determining a route for the connection at a central routing device based on the positional information (pg 1233 to page 1234, A. Location Information. Daniel Camara et al. disclose all

host in the MANET have a routing table and use the location information to reduce number of routing message);

generating routing information at the routing device corresponding to the determined route (pg 1233 to page 1234, A. Location Information. Daniel Camara et al. disclose all host in the MANET have a routing table and use the location information to reduce number of routing message); and

However, Daniel Camara et al. do not disclose transmitting the routing information from the routing device to the first mobile station, the second mobile station and the further mobile station.

In an analogous art, Mansour discloses transmitting the routing information from the routing device to the first mobile station, the second mobile station and the further mobile station (col. 6, lines 38-65. Mansour discloses that the DAP then determines the status and current location of each destination mobile phone in the talk-group by sending a status and location query to the HLR 30 via the STP 26. The DAP 76 then signals the BTS 14 via the MSC 24 to provide voice channels to the originating mobile phone 48 and the destination phones 50, 52, 54, 56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile host of Daniel Camara et al. by specifically including transmitting the routing information from the routing device to the first mobile station, the second mobile station and the further mobile station, as taught by Mansour, the motivation being in order to route voice packet to each mobile station.

Regarding claim 15, the combination of Daniel Camara et al.and Mansour disclose all limitations in claim 14. Further, Mansour discloses the method wherein the wireless communication system operates in conjunction with a cellular mobile wireless network having base stations, the first, second and further mobile stations are located in wireless range of at least one base station of the cellular mobile wireless network, the routing device transmits the routing information to the at least one base station, and the at least one base station transmits the routing information to the first, second and further mobile stations (col. 6, lines 38-65).

Regarding claim 16, the combination of Daniel Camara et al.and Mansour disclose all limitations in claim 14. Further, Mansour discloses the method wherein the mobile stations determine the positional information and transmit the routing information to the at least one base station (fig. 2A, col. 4, lines 19-51).

Regarding claim 19, the combination of Daniel Camara et al. and Mansour disclose all limitations in claim 14. Further, Mansour discloses the method wherein the second mobile station makes available a particular service, service information concerning the service is stored in a storage device, the service information is provided from the storage device to the first mobile station, after the first mobile station receives the service information, the first mobile station signals to the routing device that the first mobile station would like to access the service, and after being signaled by the first mobile station, the routing device establishes a service connection for the service from the first mobile station to the second mobile station by generating routing information for the service connection (fig. 2A, col. 4, lines 19-51).

Regarding claim 20, the combination of Daniel Camara et al. and Mansour disclose all limitations in claim 19. Further, Mansour discloses the method wherein the wireless communication system operates in conjunction with a cellular mobile wireless network having base stations, the first, second and further mobile stations are located in wireless range of at least one base station of the cellular mobile wireless network, the at least one base station broadcasts the service information stored in the storage device (fig. 2A, col. 4, lines 19-51).

Regarding claim 22, the combination of Daniel Camara et al. and Mansour disclose all limitations in claim 14. Further, Mansour discloses the method wherein the routing information describes transmission resources which the first, second and further mobile stations are to reserve for the connection (fig. 2A, col. 4, lines 19-51).

Regarding claim 23, the combination of Daniel Camara et al.and Mansour disclose all limitations in claim 22. Further, Mansour discloses the method wherein when the connection is to be terminated, the routing device instructs the first, second and further mobile stations to free the transmission resources used for the connection (fig. 2A, col. 4, lines 19-51).

3. Claims 17-18 and 24-333 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel Camara et al. in view of Mansour (U.S. 6292671) and further in view of Shyy et al. (Pub. No.: 20050282554).

Regarding claim 17, the combination of Daniel Camara et al. and Mansour disclose all limitations in claim 15. However, the combination of Daniel Camara et al. and Mansour does not disclose the method wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the

mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode.

In an analogous art, Shyy et al. disclose the method wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode ([0042] to [0044]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile host of Daniel Camara et al. by specifically including disclose the method wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode, as taught by Shyy et al., the motivation being in order to balance cell loads or prevent cell congestion.

Regarding claim 18, the combination of Daniel Camara et al. and Mansour and Shyy et al. disclose all limitations in claim 14. Further, Shyy et al. disclose the method wherein the

mobile stations operate in the second operating mode only when the cellular mobile wireless network reaches a capacity limit ([0042] to [0044]).

Regarding claim 24, the combination of Daniel Camara et al. and Mansour disclose all limitations in claim 16. However, the combination of Daniel Camara et al. and Mansour do not disclose the method wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode.

In an analogous art, Shyy et al. disclose wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode ([0031] to [0044]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile host of Daniel Camara et al. by specifically including wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance

with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode, as taught by Shyy et al., the motivation being in order to balance cell loads or prevent cell congestion.

Regarding claim 25, the combination of Daniel Camara et al. and Mansour and Shyy et al. disclose all limitations in claim 24. Further, Shyy et al. disclose the method wherein the mobile stations operate in the second operating mode only when the cellular mobile wireless network reaches a capacity limit ([0031] to [0044]).

Regarding claim 26, this claim is rejected for the same reason as set forth in claim 19.

Regarding claim 27, the combination of Daniel Camara et al. and Mansour and Shyy et al. disclose all limitations in claim 24. Further, Shyy et al. disclose the method wherein the at least one base station broadcasts the service information stored in the storage device ([0031] to [0044]).

Regarding claim 28, this claim is rejected for the same reason as set forth in claim 21.

Regarding claim 29, this claim is rejected for the same reason as set forth in claim 22.

Regarding claim 30, this claim is rejected for the same reason as set forth in claim 23.

Regarding claim 31, this claim is rejected for the same reason as set forth in claim 1.

Regarding claim 32, this claim is rejected for the same reason as set forth in claim 1.

Regarding claim 33, this claim is rejected for the same reason as set forth in claim 1.

4. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel Camara et al. in view of Mansour (U.S. 6292671) and further in view of Malladi et al. (Pub. NO.: 20030081586).

Regarding claim 21, the combination of Daniel Camara et al. and Mansour disclose all limitations in claim 14. However, the combination of Daniel Camara et al. and Mansour do not disclose wherein the routing information describes a transmit power level with which the first, second and further mobile stations are to operate for the connection.

In an analogous art, Malladi et al. disclose the method wherein the routing information describes a transmit power level with which the first, second and further mobile stations are to operate for the connection ([0014] to [0016]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile host of Daniel Camara et al. by specifically including wherein the routing information describes a transmit power level with which the first, second and further mobile stations are to operate for the connection, as taught by Shyy et al., the motivation being in order to provide downlink signal power to each mobile stations.

***Response to Argument***

5. Applicant's arguments filed 11/05/2006 have been fully considered but they are not persuasive. Please see the below explanation.

Applicant, on page 7-8 of the remark, argues that Camara neither teaches, discloses, nor suggests "determining a route for the connection at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14. Camara, in fact, has no "central routing device" at all. Camara, rather, uses the location information to reduce the number of routing *messages,* as noted graciously in the Office Action at the top of page 3, not for

"determining a route for the connection at a central routing device." However, the Examiner respectfully disagrees.

The Camara's invention is to create a routing table based upon **destination's location and mobiles location.**

In page 1232, Camara discloses that the system (an ant agent) collects **all nodes position**. Moreover, in page 1233, Camara discloses that all mobiles (includes a source mobile 511 and 512) participate in a **MNET have to provide their location** information to the system.

Therefore, when the source mobile requests the routing table for transmitting packet to the destination mobile, the source mobile and destination mobile exchange mobiles location information (mobiles location) in MNET. Once the exchanged is completed, the packet transfers from mobile (node) to mobile (node) until it reaches the destination mobile (node). Based upon the source mobile, destination mobile and mobiles location, it determines and generates a routing path for transferring packet from the source mobile to the destination mobile.

Applicant, on page 7 of the remark, argues that Mansour is not "determining a route for the connection at central routing device based on the position information". However, the Examiner respectfully disagrees.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant, on page 7 of the remark, argues that Camara, however, already routes voice packets to each mobile station. Camara in fact, is directed to a routing algorithm for a network of mobile hosts that can communicate with each other, as described in the second full paragraph of the first column at page 1232. Camara is complete in itself. It is submitted, therefore, that persons of ordinary skill in the art who read Camara at the time the invention was made would not have been motivated to modify Camara as proposed in the Office Action, since Camara already routes voice packets to each mobile station. However, the Examiner respectfully disagrees.

In response to applicant's argument that persons of ordinary skill in the art who read Camara at the time the invention was made would not have been motivated to modify Camara as proposed in the Office Action, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Applicant, on page 10-13 of the remark, argues that Neither C&mara nor Mansour teaches, discloses, nor suggests "acquiring positional information on the first mobile station, the second mobile station and the further mobile station," "determining a route for the connection at a central routing device based on the positional information," and "transmitting the routing information from the routing device to the first mobile station, the second mobile station and the further mobile station." However, the Examiner respectfully disagrees.

As mentioned above, the Camara's invention is to create a routing table based upon **destination's location and mobiles location.**

In page 1232, Camara discloses that the system (an ant agent) collects **all nodes position**. Moreover, in page 1233, Camara discloses that all mobiles (includes a source mobile 511 and 512) participate in a **MNET have to provide their location** information to the system.

Therefore, when the source mobile requests the routing table for transmitting packet to the destination mobile, the source mobile and destination mobile exchange mobiles location information (mobiles location) in MNET. Once the exchanged is completed, the packet transfers from mobile (node) to mobile (node) until it reaches the destination mobile (node). Based upon the source mobile, destination mobile and mobiles location, it determines and generates a routing path for transferring packet from the source mobile to the destination mobile.

## Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-7687.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Dai A Phuong/
Examiner, Art Unit 2617
Date: 01/09/2009

/Alexander Eisen/
Supervisory Patent Examiner, Art Unit 2617